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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,680	08/19/2003	Ryouichi Inanami	04329.3115	2707
22852	7590	08/08/2005	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			LIN, SUN J	
			ART UNIT	PAPER NUMBER
			2825	

DATE MAILED: 08/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/642,680

Applicant(s)

INANAMI ET AL.

Examiner

Sun J. Lin

Art Unit

2825

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-8,11 and 12 is/are rejected.
- 7) ☒ Claim(s) 2,3,9 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/19/03, 6/22/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This office action is in response to application 10/642,680 filed on 08/19/2003. Claims 1 – 12 remain pending in the application.

### *Specification Objections*

2. The specification is objected to because of following informalities:

Page 18, line 17, change "have" to **—has—**.

Page 22, line 27, change "is determined is determined" to **—is determined—**.

Appropriate correction is required.

### *Claim Objections*

3. Claims listed below are objected to because of the following informalities:

Claim 1, line 13, after CP insert **—(character projection)—**.

Claim 2, line 5, after "deflector" insert **—for each character pattern—**.

Claim 2, line 6, after "parameter" insert **—for said each character pattern—**.

Claim 2, line 7, change "to performing" delete **—when performing—**.

Claim 2, line 8, change "an exposure sequence" to **—the exposure sequence—**.

Claim 2, line 9, before "sum" delete **—the—**.

Claim 2, line 10, after "times" insert **—for the all character patterns—**.

Claim 3, line 5, before "sum" delete **—the—**.

Claim 3, line 6, after "times" insert **—for the all character patterns—**.

Claim 4, line 4, after "deflected" insert **—by—**.

Claim 4, line 6, after "deflected" insert **—by—**.

Claim 4, line 11, after "deflected" insert **—by—**.

Claim 4, line 13, after "distance" delete **—of the beam—**.

Claim 4, line 13, after "deflected" insert **—by—**.

Claim 4, line 17, change "to performing" delete **—when performing—**.

Claim 4, line 18, change "an exposure sequence" to **—the exposure sequence —**.

Claim 4, line 19, before "sum" delete **—the—**.

Claim 4, line 20, after "distances" insert **—for the all character patterns—**.

Claim 6, line 5, before "sum" delete **—the—**.

- Claim 6, line 6, after "distances" insert **—for the all character patterns—**.
- Claim 8, line 14, after CP insert **—(character projection)—**.
- Claim 9, line 4, after "deflector" insert **—for each character pattern—**.
- Claim 9, line 5, after "parameter" insert **—for the each character pattern—**.
- Claim 9, line 7, change "an exposure sequence" to **—the exposure sequence —**.
- Claim 9, line 9, after "times" insert **—for said all character patterns—**.
- Claim 10, line 4, before "sum" delete **—the—**.
- Claim 10, line 5, after "times" insert **—for the all character patterns—**.
- Claim 11, line 3, after "deflected" insert **—by—**.
- Claim 11, line 5, after "deflected" insert **—by—**.
- Claim 11, line 10, after "deflected" insert **—by—**.
- Claim 11, line 12, after "deflected" insert **—by—**.
- Claim 11, line 17, change "an exposure sequence" to **—the exposure sequence —**.
- Claim 11, line 18, before "sum" delete **—the—**.
- Claim 11, line 19, after "distances" insert **—for the all character patterns—**.
- Claim 12, line 4, before "sum" delete **—the—**.
- Claim 12, line 5, after "distances" insert **—for the all character patterns—**.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. Claims 4 – 6, 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to Claim 4, two types of beams, namely charged particle beam (line 4) and character beam (line 6), have first been mentioned, and then the beam has been mentioned three times (line 10 and line 11) later. It is not clear that the beam is the charged particle beam or the character beam.

Regarding to Claim 11, similarly two types of beams, namely charged particle beam (line 3) and character beam (line 5), have first been mentioned, and then the beam has been mentioned three times (line 9 and line 10) later. It is not clear that the beam is the charged particle beam or the character beam.

Other dependent claims that are not specifically cited above are also rejected because of the deficiencies of their respective parent claims.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1, 7 and 8 are rejected under 35 U.S.C. 102(a) as being unpatentable over English Translation of Japanese Patent Application Publication No. 2003-173965 to Inenami et al.

7. As to Claim 1, Inenami et al. show and teach the following subject matter:

- A method for creating charged-particle-beam exposure data containing description of an exposure sequence of character patterns in a deflection region of a specimen to perform exposure of a charged particle beam according to a character projection technique – [Drawings 1 – 5; Drawing 6; Drawing 22; abstract];
- Character projection method, Character projection (CP) aperture mask 410 – [Drawing 22; Claim 1; Paragraph 0002];
- Character beam 401, shaping deflector 408, objective deflector 413 – [Drawing 22; Claim 1];
- Settling latency time (i.e., first value) of shaping deflector, settling latency time (i.e., second value) of objective deflector – [Drawing 5; Drawing];
- Selecting longer settling latency time for the shaping deflector of objective deflector as a parameter in determining the exposure sequence of the character patterns in the deflection region – [Drawing 5; Paragraph 0016]

For reference purposes, the explanations given above in response to Claim 1 are called [Response A] hereinafter.

8. As to Claims 7 and 8, reasons are included in [Response A] given above.

***Allowable Subject Matter***

9. Claims 2, 3, 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Those claims are allowed is because that the prior art does not teach or fairly suggest the following subject matter:

- When performing exposures of all character patterns in the deflection region, an exposure sequence of character patterns is determined so that the sum of selected settling times for the all character patterns is minimum in combination with other limitations as recited in **Claim 2** and **Claim 9**, respectively;

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sun J Lin whose telephone number is (571) 272 - 1899. The examiner can normally be reached on Monday-Friday 9:30AM - 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S Smith can be reached on (571) 272 - 1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sun James Lin  
Patent Examiner  
Art Unit 2825  
August 5, 2005

